Consolidated Water Use Efficiency 2002 PSP
Proposal Part One:
A. Project Information Form

1. Applying for (select one):

☒ (a) Prop 13 Urban Water Conservation Capital Outlay Grant

☐ (b) Prop 13 Agricultural Water Conservation Capital Outlay Feasibility Study Grant

☐ (c) DWR Water Use Efficiency Project

2. Principal applicant (Organization or affiliation): City of Hesperia/ Hesperia Water District

3. Project Title: Hesperia Old Town Waterline Replacement

4. Person authorized to sign and submit proposal:

Name, title	Mike Podegracz, Development Services Director/City Engineer
Mailing address	15776 Main St., Hesperia, CA
Telephone	(760) 947-1438
Fax.	(760) 244-2515
E-mail	mpodegracz@ci.hesperia.ca.us

5. Contact person (if different):

Name, title.	Same as Above
Mailing address.	
Telephone	
Fax.	
E-mail	

6. Funds requested (dollar amount): $ 2,214,000

7. Applicant funds pledged (dollar amount): 0

8. Total project costs (dollar amount): $ 2,320,800

9. Estimated total quantifiable project benefits (dollar amount): $2,320,800

Percentage of benefit to be accrued by applicant: 100

Percentage of benefit to be accrued by CALFED or others: N/A

Consolidated Water Use Efficiency 2002 PSP
Proposal Part One:
A. Project Information Form (continued)

10. Estimated annual amount of water to be saved (acre-feet): 193

Estimated total amount of water to be saved (acre-feet): 8,940

Over _30 years 8,940

Estimated benefits to be realized in terms of water quality, instream flow, other: N/A

11. Duration of project (month/year to month/year): Oct/02 to Dec/03

12. State Assembly District where the project is to be conducted: 34th

13. State Senate District where the project is to be conducted: 17th

14. Congressional district(s) where the project is to be conducted: 40th

15. County where the project is to be conducted: San Bernardino

16. Date most recent Urban Water Management Plan submitted to the Department of Water Resources:

17. Type of applicant (select one):
Prop 13 Urban Grants and Prop 13 Agricultural Feasibility Study Grants:

- ☒ (a) city
- ☐ (b) county
- ☐ (c) city and county
- ☐ (d) joint power authority
- ☐ (e) other political subdivision of the State, including public water district
- ☐ (f) incorporated mutual water company

DWR WUE Projects: the above entities (a) through (f) or:

- ☐ (g) investor-owned utility
- ☐ (h) non-profit organization
- ☐ (i) tribe
- ☐ (j) university
- ☐ (k) state agency
- ☐ (l) federal agency

18. Project focus:

- ☐ (a) agricultural
- ☒ (b) urban

Consolidated Water Use Efficiency 2002 PSP
Proposal Part One:
A. Project Information Form (continued)

19. Project type (select one):
Prop 13 Urban Grant or Prop 13 Agricultural Feasibility Study Grant capital outlay project related to:

- ☒ (a) implementation of Urban Best Management Practices
- ☐ (b) implementation of Agricultural Efficient Water Management Practices
- ☐ (c) implementation of Quantifiable Objectives (include QO number(s)

  _____
- ☐ (d) other (specify)

  _____

DWR WUE Project related to:

- ☒ (e) implementation of Urban Best Management Practices
- ☐ (f) implementation of Agricultural Efficient Water Management Practices
- ☐ (g) implementation of Quantifiable Objectives (include QO number(s))
- ☐ (h) innovative projects (initial investigation of new technologies, methodologies, approaches, or institutional frameworks)
- ☐ (i) research or pilot projects
- ☐ (j) education or public information programs
- ☐ (k) other (specify)

  _____

20. Do the actions in this proposal involve physical changes in land use, or potential future changes in land use?

- ☐ (a) yes
- ☒ (b) no

If yes, the applicant must complete the CALFED PSP Land Use Checklist found at http://calfed.water.ca.gov/environmental_docs.html and submit it with the proposal.

Consolidated Water Use Efficiency 2002 PSP
Proposal Part One
B. Signature Page

By signing below, the official declares the following:

The truthfulness of all representations in the proposal;

The individual signing the form is authorized to submit the proposal on behalf of the applicant; and

The individual signing the form read and understood the conflict of interest and confidentiality section and waives any and all rights to privacy and confidentiality of the proposal on behalf of the applicant.

_____	_Mike Podegracz, _Development Services Director__	_February 27, 2002_
Signature	Name and title	Date

Proposal Part Two

Project Summary

The Hesperia Water District (HWD), located in the High Desert region of San Bernardino County, has responsibility for servicing users within 74 square miles of the Mojave River Basin. In the past ten years, we have experienced an increasing gap between water supply and demand, caused by high and continuous growth in a region that is extremely arid. At the same time, we are faced with areas of very old water infrastructure that results in critical water loss, costly manpower, and potential environmental damage. The impact is increasing dependence on replacement water, primarily from the Bay Delta. To remedy those problems, we have taken an aggressive stance toward identifying and planning needed infrastructure improvements, along with required conservation measures. System deficiencies and improvements are delineated in the December 2000 *Hesperia Water District Urban Water Management Plan For The Planning Period 2000-2020*, which meets the requirements under the Urban Water Management Planning Act. The Plan was adopted by HWD and submitted to the Department of Water Resources (DWR).

As part of our systematic planning, we are requesting $2,214,000 for replacement of circa 10 miles of inadequate waterlines in Old Town Hesperia. The waterlines, consisting of 4" uncoated steel piping and more than 50 years old, are leaking, with resulting water loss of some 193 acre feet (AF) of water per year. When calculated against the standard 30-year infrastructure life cycle, the quantitative benefit to the HWD of waterline replacement amounts to $2,320,800. The qualitative benefits to the local area are increased fire protection, and environmental improvement. The benefit to the State is diminished reliance on replacement water from the Bay Delta. The Project will be completed in 14 months.

A. Scope of Work: Relevance and Importance

1. Nature, Scope, and Objectives of the Project. The HWD, in partnership with the Mojave Water Agency (MWA), is requesting funding under Proposition 13, Urban Water Conservation Capital Outlay Grant, for replacement of 55,350 linear feet (LF) of waterlines in an area of the City of Hesperia known as "Old Town". The area is a geographically divisible segment of the City, located within the Community Development Block Grant (CDBG) target area. Old Town has a population of circa 3,130, with over 51% of the population below the low-to-moderate income, as defined in 24 CFR 570.208. The current waterlines are 50+ years old and have serious leaks, which result in water loss in an area of the Mojave River Basin already stressed by an increasing disparity between water supply and demand. Based on careful monitoring and emergency repair orders, we conservatively estimate the water loss to be 193 AF per year. The impact is our increasing dependence on imported replacement water from the Bay Delta. The waterlines also have inadequate water pressure during periods of high demand, hence are limited for fire protection, and the leakage has potential contamination due to system breaches, impacting the environment.

The scope of the Hesperia Old Town Waterline Replacement Project is the replacement of existing 4" uncoated steel waterlines with new 8" and 12" Polyvinyl Chloride Pipes (PVCs) in

the area of Hesperia bounded by Hercules Street, Hesperia Road, Olive Street, and Seventh Avenue. Figure A-1 illustrates location points with distance and cost. Appendix A, Supporting Documentation, contains a geographical map of the area.

As an element of Urban Water Management Best Practices, HWD has been conducting ongoing engineering studies and monitoring water supply and quality, documented in Water and Sewer Master Plans. The most recent (July 2001) *Hesperia Water District Water Master Plan*, an update to the *Hesperia Water District Urban Water Management Plan For The Planning Period 2000-2020,* outlines system deficiencies and required capital improvements in five-year increments over the next twenty-five years. The needed improvements are listed below. The proposed Project is an integral part of our overall "get well plan".

- Construct five new storage facilities for a total storage capacity (existing and proposed) of 69.5 million gallons (MG).
- Construct nine new supply wells providing an additional production capacity of 13,000 gallons per minute (current maximum capacity is 18,250 gallons per minute).
- Upgrade and install new pipelines.
- Upgrade 37 pressure reducing stations, remove one pressure reducing station, and install three new pressure-reducing stations.
- ***Incorporate a 20-year program to replace and upgrade existing undersized 4" steel piping.***

The Project objective is to eliminate critical water loss, caused by the leaks, increase fire protection, eliminate the possibility of contamination, and decrease our dependence on replacement water from the Bay Delta. It is one more systematic step in our overall water management planning, risk mitigation, and cost avoidance.

A brief organizational history follows, along with a background of the problem.

Organizational History. HWD was originally formed in 1975 as a County Water District pursuant to the California County Water District Law. The water system was purchased for $2.755 million from the Victor Valley County Water District using general obligation bonds, and an additional $1.465 million of general obligation bonds were used to fund system improvements. HWD is a member of the Victor Valley Wastewater Reclamation Authority (VVWRA), a five-member Joint Powers Authority that includes the cities of Apple Valley, Victorville, Adelanto, and the County of San Bernardino.

Figure A-1 Waterline Replacement Location and Cost Estimate
Area Bounded By Hercules Street, Olive Street, 7th Avenue and Hesperia Road

Street	From	To	Distance	LF Water	Cost ($32/LF)
Hercules Street	7th Avenue	5th Avenue	1,350	-	$ -
Hercules Street	5th Avenue	3rd Avenue	1,350	1,350	$ 43,200
Hercules Street	3rd Avenue	2nd Avenue	550	550	$ 17,600
Hercules Street	2nd Avenue	Hesperia Rd.	800	-	$ -
Cashew Street	5th Avenue	3rd Avenue	1,350	1,350	$ 43,200
Willow Street	7th Avenue	Hesperia Rd.	4,050	-	$ -
Vine Street	7th Avenue	3rd Avenue	2,700	2,700	$ 86,400
Vine Street	3rd Avenue	Hesperia Rd.	1,350	1,350	$ 43,200
Live Oak Street	7th Avenue	3rd Avenue	2,700	2,700	$ 86,400
Live Oak Street	3rd Avenue	Hesperia Rd.	1,350	1,350	$ 43,200
Pine Street	7th Avenue	3rd Avenue	2,700	2,700	$ 86,400
Pine Street	3rd Avenue	Hesperia Rd.	1,350	1,350	$ 43,200
Cajon Street	7th Avenue	3rd Avenue	2,700	2,700	$ 86,400
Cajon Street	3rd Avenue	Hesperia Rd.	1,350	1,350	$ 43,200
Chestnut Street	7th Avenue	3rd Avenue	2,700	2,700	$ 86,400
Chestnut Street	3rd Avenue	Hesperia Rd.	1,350	1,350	$ 43,200
Smoketree Street	7th Avenue	3rd Avenue	2,700	2,700	$ 86,400
Smoketree Street	3rd Avenue	Hesperia Rd.	1,350	1,350	$ 43,200
Spruce Street	7th Avenue	3rd Avenue	2,700	2,700	$ 86,400
Spruce Street	3rd Avenue	Hesperia Rd.	1,350	1,350	$ 43,200
Juniper Street	7th Avenue	3rd Avenue	2,700	2,700	$ 86,400
Juniper Street	3rd Avenue	Hesperia Rd.	1,350	1,350	$ 43,200
Yucca Street	7th Avenue	3rd Avenue	2,700	-	$ -
Walnut Street	7th Avenue	4th Avenue	2,025	-	$ -
Walnut Street	4th Avenue	3rd Avenue	675	-	$ -
Walnut Street	3rd Avenue	Hesperia Rd.	1,350	-	$ -
Orange Street	7th Avenue	Hesperia Rd.	4,050	4,050	$ 129,600
Olive Street	7th Avenue	Hesperia Rd.	4,050	4,050	$ 129,600
7th Avenue	Walnut Street	Hercules Street	5,200	-	$ -
7th Avenue	Olive Street	Walnut Street	800	800	$ 25,600
5th Avenue	Olive Street	Walnut Street	800	800	$ 25,600
5th Avenue	Walnut Street	Juniper Street	800	-	$ -
5th Avenue	Juniper Street	Hercules Street	4,400	-	$ -
3rd Avenue	Olive Street	Hercules Street	6,000	-	$ -
2nd Avenue	Olive Street	Walnut Street	800	800	$ 25,600
2nd Avenue	Walnut Street	Yucca Street	800	-	$ -
2nd Avenue	Yucca Street	Willow Street	4,400	4,400	$ 140,800
1st Avenue	Olive Street	Walnut Street	800	800	$ 25,600
1st Avenue	Main Street	Willow Street	4,000	4,000	$ 128,000
Total			***85,500***	***55,350***	***$ 1,771,200***

HWD lies within the jurisdiction of the MWA, which was formed in 1959 by an Act of the State Legislature and activated by a vote of the residents within the proposed boundaries in 1960.

The area of the MWA originally encompassed most of the Mojave River, Lucerne and El Mirage, and was later expanded to the southeast. The Act establishing the MWA provides broad implementation powers to do "any and every act necessary so that sufficient water may be available for any present or future uses of the lands or inhabitants of the agency." In carrying out this legislative directive, MWA entered into a contract with the California Department of Water Resources (DWR) in 1963 for a maximum annual entitlement of 50,800 AF from the State Water Project (SWP). In 1993, the MWA was named the Water Master, responsible for a stipulated judgment, which provided a physical solution to the area's, declining groundwater levels by restricting the amount of water that may be pumped without additional cost to the producer. Thus, the relationship between MWA and HWD is key to the long-range planning efforts of HWD. To date, MWA has acquired SWP entitlements totaling 75,890 AF.

HWD currently supplies water to the City of Hesperia, serving boundaries identified in the 2001 Water Master Plan, and acreage along Interstate 15 that was originally served by San Bernardino County Service Area 70-Improvement Zone J, subsequently annexed to the City. HWD encompasses circa 74 square miles providing water service to 19,621 active connections consisting of residential, commercial, industrial, agricultural, and public users. Of those connections, approximately 92% are single-family dwellings. The District's current system consists of 11 active wells, 44.4 million gallons of storage, and approximately 558 miles of piping.

HWD relies on groundwater as the only supply source. The eleven active wells range in depths from 700 to 1,115 feet. The total pumping capacity of the wells is 18,250 gpm, providing a maximum production capacity of 81 acre-feet per day, 29,442 acre-feet per year. The wells are located in the Alto Sub-Area portion of the Mojave Basin, which is recharged by rainfall and snow melt from the local mountains, and supplemental recharge of imported water from the SWP at the Rock Springs Outlet. The average rainfall is 6 inches per year; the extent and type of snow in the San Bernardino Mountains impact yearly run-offs and groundwater recharge. Other recharge is provided by the MWA through the Rock Springs Outlet, using imported SWP water during wet seasons.

Background of the Problem. The City of Hesperia and surrounding communities in the Mojave Desert have experienced an enormous growth in the past ten years with projections for continuing growth in the future. As that has occurred, we have experienced an increasing disparity between water supply and demand. Figures A-2 and A-3 depict the projected Equivalent Dwelling Units (EDUs) and the demand for AF of water per year based on growth of 1.4% and 3%, respectively. 1.4% represents historical growth to date; 3% is the realistically anticipated growth for the future. Using the same growth scenarios, the Annual Daily Demand (ADD) by component users is shown in Figures A-4 and A-5.

Figure A-2 Water Demand at 1.4% Population Growth

Year	2000	2005	2010	2015	2020	2025
EDUs	19,683	21,061	22,439	23,817	25,194	26,572
Population	63,589	67,395	71,805	76,214	80,621	85,030
Water AF/Year	16,467	17,453	18,584	19,727	20,870	22,012

(1) City of Hesperia, Hesperia Water District, *Draft Water Master Plan*, July 24, 2001

Figure A-3 Water Demand at 3% Population Growth

Year	2000	2005	2010	2015	2020	2025
EDUs	19,683	22,635	25,588	28,540	31,493	34,445
Population	63,589	72,432	81,882	91,328	100,778	110,224
Water AF/Year	16,467	18,752	21,194	23,648	26,090	28,532

Figure A-4 Projected Water Usage (MGD)
At 1.4% Growth by Component

Year	2001	2005	2010	2015	2020	2025
Single Family	11.79	12.49	13.31	14.13	14.95	15.76
Multi-Family	1.03	1.09	1.16	1.23	1.31	1.38
Commercial	0.74	0.78	0.83	0.88	0.93	0.98
Agricultural	0.10	0.11	0.11	0.12	0.13	0.13
Schools						
Elementary	0.42	0.45	0.47	0.50	0.53	0.56
Middle	0.035	0.037	0.040	0.042	0.044	0.047
High	0.035	0.037	0.040	0.042	0.044	0.047
Public Users	0.55	0.59	0.62	0.66	0.70	0.74
Total ADD	**14.70**	**15.58**	**16.59**	**17.61**	**18.63**	**19.65**

Figure A-5 Projected Water Usage (MGD)
At 3% Growth by Component

Year	2001	2005	2010	2015	2020	2025
Single Family	11.79	13.43	15.18	16.93	18.68	20.43
Multi-Family	1.03	1.17	1.33	1.48	1.63	1.78
Commercial	0.74	0.84	0.95	1.06	1.16	1.27
Agricultural	0.10	0.11	0.13	0.14	0.16	0.17
Schools						
Elementary	0.420	0.478	0.541	0.603	0.666	0.728
Middle	0.035	0.040	0.045	0.050	0.055	0.061
High	0.035	0.040	0.045	0.050	0.055	0.061
Public Users	0.55	0.63	0.71	0.79	0.88	0.96
Total ADD	**14.70**	**16.74**	**18.92**	**21.11**	**23.29**	**25.47**

B. Scope of Work: Technical/Scientific Merit, Feasibility, Monitoring, and Assessment.

1. Methods, Procedures, and Facilities. As previously noted, the proposed Project is part of HWD's systematic plan to replace or upgrade inadequate infrastructures and construct new facilities where required. Since 1999-2000, we have successfully replaced 14.4 miles (about 76,000 LF) of the same old and leaky 4" piping with 8" and 12" waterlines. Hence, the technical merit and feasibility of this Project rest on equivalent work and experience. Specific methodological approaches and procedures follow in the discussion of tasks and subtasks.

As illustrated in Figure B-1 below, we have identified 15 subtasks within the following five major tasks:

- Task I, Land Purchase/Easement
- Task II, Planning/Design/Engineering
- Task VI, Environmental Mitigation/Enhancement
- Task VII Construction (VIIa)/Administration (VIIb)
- Task VIII Project/Legal/License Fees

Tasks III, IV and V, Materials Installation, Structures, and Equipment Purchase/Rental are subsumed under Task VIIa.

Based on DWR's schedule in the Request for Proposal (RFP), we assume Project start on 1 October 2002. We will complete the Project on 1 December 2003.

Task I. Since the proposed Project consists of replacement of existing waterlines, there is no land purchase required. This Task entails researching existing agreements from landowners and stakeholders to proceed with construction, validating property surveys, and obtaining approvals for the construction, if required by changes in land ownership. The Task will start on 2 October and end on 1 November 2002.

Task II. Task II starts on 1 November 2002, and ends on 1 May 2003. We start by conducting planning meetings with HWD and MWA staff and stakeholders, and by opening discussions with members of the community to apprise them of our proposed plan. In accordance with the Urban Water Management Plan (UWMP), adopted in 2000, HWD has implemented a far-reaching public education program, and the community is actively involved with local water issues through community events, HWD-sponsored events, and open hearings at the Public Works Advisory Committee meetings, HWD Board meetings and other specially called meetings. At Grant award, we will set in motion those vehicles for dissemination of information and discussions for a period of four months.

Concurrently, our engineering staff will develop and finalize engineering plans and designs, which are based on existing, on-line drawings, maps, network grids, and other documentation. The engineering design will consist of surveying and updating designated nodes, required physical connectivities, and specification of needed materials and test methodologies. The Project Manager will schedule and hold preliminary and critical design reviews for the staff, stakeholders, and potential contractors. When the plans/designs have been approved, we will advertise the project for bid. As illustrated in Figure A-1, the preliminary construction cost estimates are $32.00 per LF.

Task VI. Before the final engineering design and plans are complete, we will evaluate the project for compliance with the California Environmental Quality Act (CEQA). Since this is replacement work, we do not anticipate non-compliance with that Act. We will also research and apply any changes in applicable local, state, and federal ordnances and laws that may have occurred since completion of the previous waterline construction in 2001. This Task starts on 3 February 2003, and ends on 1 April 2003.

Task VII. This Task consists of construction and administration. Construction starts on 1 May 2003 and ends on 1 September 2003 and entails site preparation, and installation of new waterlines. The work will be done in a grid, node-by-node, street-by-street.

Administration consists of administering the Project throughout the duration, gathering and analyzing data after construction, and developing the required programmatic and fiscal Quarterly and Final Reports. Data collection and analysis will be done between 1 September and 24 November 2003.

Task VIII. This Task, which runs for the duration of the Project, entails identification and payment of applicable licenses and fees.

2. Task List and Schedule. Figure B-1 illustrates the major tasks, in line with the budget as required by the RFP, subtasks with start/end dates and cost. Figure B-2 shows major tasks in the time period 1 October 2002 to 1 December 2003 by Fiscal Year (FY) Quarter with projected expenditures for each Quarter. Figure B-3 delineates end products and deliverables for each major task with due dates. Figure B-4 is a Gantt Chart that consolidates schedule information from the Figures.

Figure B-1 Tasks with Timeline and Cost

Task Subtask	Description	Start/End Dates	Cost
I	**Land Purchase/Easement**	**10/1/02-11/1/02**	**$ 20,000**
1	Evaluate existing agreements	10/2/02-10/15/02	$ 7,000
2	Conduct/validate property survey	10/7/02-11/1/02	$ 7,000
3	Obtain required approval	10/7/02-11/1/02	$ 6,000
II	**Planning/Design/Engineering**	**11/1/02-5/1/03**	**$ 180,680**
1	Conduct planning meetings with staff and stakeholders	11/1/02-2/28/03	$ 20,000
2	Develop/finalize engineering design	12/2/02-2/3/03	$ 100,000
3	Conduct design reviews	2/5/03-2/14/03	$ 20,000
4	Submit design/plans for approval	2/17/03-3/14/03	$ 20,000
5	Submit plans with Request for Quote	3/19/03-4/16/03	$ 10,000
6	Evaluate and select contractor bids	4/17/03-4/30/03	$ 10,680
III	**Materials/Installation (See Task VIIa)**		
IV	**Structures (See Task VIIa)**		
V	**Equipment Purchase/Rental (See Task VIIa)**		
VI	**Environmental Mitigation/Enhancement**	**2/3/03-4/1/03**	**$ 20,000**
1	Evaluate and comply with CEQA	2/3/03-4/1/03	$ 10,000
2	Evaluate consistency and compliance with CALFED objectives.	2/3/03-4/1/03	$ 10,000
VII	**Construction/Administration**	**10/1/02-12/1/03**	**$ 1,801,200**
	a. Construction	**5/1/03-9/1/03**	
1	Prepare site and	5/1/03-9/1/03	$ 1,771,200
2	Install new waterlines	5/1/03-9/1/03	
	b. Administration	**10/1/02-12/1/03**	
1	Monitor and collect/analyze data	9/1/03-11/15/03	$ 15,000
2	Develop Quarterly and Final Reports	10/1/02-12/1/03	$ 15,000
VIII	**Project/Legal/License Fees**	**10/1/02-12/1/03**	**$ 15,000**
	Contingency		**$ 177,120**
	Total		**$ 2,214,000**

Note: Unbolded totals for all subtasks equal bolded totals for each major task.

Figure B-2 Tasks with Projected Expenditures by Quarter

Task/Subtask	FY03 1st Quarter	FY03 2nd Quarter	FY03 3rd Quarter	FY03 4th Quarter	FY04 1st Quarter
Land Purchase/Easement					
Evaluate existing agreements	$ 7,000	0	0	0	0
Conduct/validate property survey	$ 7,000	0	0	0	0
Obtain required approval	$ 6,000	0	0	0	0
Planning/Design/Engineering					
Conduct planning meetings with staff and stakeholders	$10,000	$ 10,000	0	0	0
Develop/finalize engineering design	$20,000	$ 80,000	0	0	0
Conduct design reviews	0	$ 20,000	0	0	0
Submit design/plans for approval	0	$ 10,000	$ 10,000	0	0
Submit plans with request for quote	0	$ 5,000	$ 5,000	0	0
Evaluate and select contractor bids			$ 10,680		
Environmental Mitigation/Enhancement					
Evaluate and comply with CEQA	0	$ 8,000	$ 2,000	0	0
Evaluate consistency and Compliance with CALFED objectives.	0	$ 8,000	$ 2,000	0	0
Construction/Administration					
a. Construction					
Prepare site/install waterlines	0	0	$ 900,000	$871,200	
b. Administration					
Monitor and collect/analyze data	0	0	0	$ 10,000	$5,000
Develop Quarterly and Final Reports	$ 3,000	$ 3,000	$ 3,000	$ 5,000	$1,000
Project/Legal/License Fees	**$ 5,000**	**$ 5,000**	**$ 5,000**	**0**	**0**
Contingency			**$ 90,000**	**$ 87,120**	**0**
Total by Quarter	**$58,000**	**$149,000**	**$1,027,680**	**$973,320**	**$6,000**

In accordance with the requirements of the RFP, should only a portion of our Project be funded, we present two options:

- Option 1 – Separate waterline abandonment and replacement into two distinct groups and complete construction through the 3rd Quarter only. This is our preferred option.

- Option 2 – Do all pre-construction preliminary work through Task VI.

Should either Option be invoked, we will search for alternative funding, both in-house and externally, to complete the Project.

Figure B-3 Deliverables by Task

Task	End Product/Deliverable	Included In	Due Date
I	Copies of agreements	1st FY03 Quarterly Report	1/14/03
	Copies of property titles	1st FY03 Quarterly Report	
II	Meeting minutes	1st FY 03 Quarterly Report	1/14/03
	Preliminary plans	2nd FY03 Quarterly Report	4/14/03
	Detailed plans	1st FY03 Quarterly Report	1/14/03
	Preliminary engineering design	2nd FY03 Quarterly Report	4/14/03
	Detailed engineering design	1st FY03 Quarterly Report	1/14/03
	Request for Quote	2nd FY03 Quarterly Report	4/14/03
	Contractor bids with rationale	3rd FY03 Quarterly Report	7/14/03
		3rd FY03 Quarterly Report	7/14/03
VI	Cross-correlation between design and environmental policies	2nd FY03 Quarterly Report	4/14/03
VII	Monitoring and test data results and analyses	4th FY03 Quarterly Report	9/15/03
		1st FY04 Quarterly Report	11/14/03
VIII	Permits, fees, miscellaneous	1st FY04 Quarterly Report	11/14/03
All	Project summary and assessment, lessons learned, final projected vs. actual expenditures	Final Report	12/1/03

3. Monitoring and Assessment. The primary objective of this Project is to eliminate water loss caused by the existing waterline infrastructure. Our goal is to get well below the "standard" 9.3% loss, as determined by DWR. The primary methodology for monitoring and verifying that the objectives and goals are met is the Hansen Management System, an industry standard automated management tool that we use to input Public Works orders, and that allows HWD staff to query a particular street and pinpoint the number of leaks in the mainline from that street and section of the network grid. Using that System, we will catalog the waterline replacement node-to-node for each street, and as the replacements are complete, we will closely monitor the nodes and do a comparative analysis between pre- and post-replacement leakage. We have historical data in the Management System database, and we can isolate and compare data from past years, as well.

All the data will be included in the Quarterly and Final Reports for DWR, and will be available on an interim basis, should that be required. Based on our experience with prior waterline replacement, the water loss should decrease dramatically after installation of the new waterlines.

The secondary objectives are to increase fire protection, and eliminate or mitigate contaminants. To verify increased fire protection, we will measure water flow and pressure, before and after replacement. To verify mitigation of contaminants, we will comparatively sample and evaluate water quality before and after replacement. Those data will also be included in the last Quarterly Report and in the Final Report.

4. Preliminary Plans and Specifications, and Certification Statements. Our Preliminary Plan, as depicted in Figure A-1 contains precise location of the proposed work, distance between points, and required waterlines by foot. Upon Grant award, HWD engineering staff will formalize the Plan and include engineering specifications, design, and drawings to be submitted as part of the Notice Inviting Bids.

A Letter of Certification is attached in Appendix A, Supporting Documentation.

C. Qualifications of the Applicants and Cooperators

1. Project Manager. Mr. Mike Podegracz, Development Services Director/City Engineer for the City of Hesperia, will be the Project Manager. His resume is attached in Appendix A, Supporting Documentation.

2. External Cooperators. MWA, the Water Master, will participate in this Project. We will share resources and lessons learned.

D. Benefits and Costs

1. Budget Breakdown and Justification. Figure D-1 shows cost with justification (Basis of Estimate) by task/subtask.

Figure D-1 Cost Justification

Task Subtask	Description	Cost	Basis of Estimate
I	**Land Purchase/Easement**	**$ 20,000**	
1	Evaluate existing agreements	$ 7,000	87 hours @ $80
2	Conduct/validate property survey	$ 7,000	88 hours @ $80
3	Obtain required approval	$ 6,000	75 hours @ $80
II	**Planning/Design/Engineering**	**$ 180,680**	
1	Conduct planning meetings with staff and stakeholders	$ 20,000	250 hours @ $80
2	Develop/finalize engineering design	$ 100,000	300 hours @ $200 500 hours @ $80
3	Conduct design reviews	$ 20,000	250 hours @ $80
4	Submit design/plans for approval	$ 20,000	250 hours @ $80
5	Submit plans with request for quote	$ 10,000	125 hours @ $80
6	Evaluate and select contractor bids	$ 10,680	134 hours @ $80
VI	**Environmental Mitigation/Enhancement**	**$ 20,000**	
1	Evaluate and comply with CEQA	$ 10,000	125 hours @ $80
2	Evaluate consistency and Compliance with CALFED objectives.	$ 10,000	125 hours @ $80
VII	**Construction/Administration**	**$1,801,200**	
	a. Construction		
1	Abandon existing waterlines and	$1,771,200	55,350 LF @ $32
2	Install new waterlines		
	b. Administration		
1	Monitoring and data collection/analysis	$ 15,000	188 hours @ $80
2	Develop Quarterly and Final Reports	$ 15,000	187 hours @ $80
VIII	**Project/Legal/License Fees**	**$ 15,000**	
	Contingency	**$ 177,120**	10% of construction
	Total	**$2,214,000**	

2. Cost-Sharing. In accordance with instructions of the RFP, we are not proposing cost-sharing for this Project.

3. Benefit Summary and Breakdown The expected outcomes and benefits of our proposed Project are:

- Lowering the water loss to an overall acceptable level, below 9.3%.
- Decreasing water replacement from the Bay Delta by 193 AF annually.
- Increasing fire protection in Old Town Hesperia.
- Eliminating or mitigating water contamination in Old Town Hesperia and surrounding areas in the City of Hesperia.

a. Quantitative Benefits. HWD's total annual water consumption is 16,000 AF. DWR's engineering estimate of our total water loss is 9.3%, which amounts to 1,488 AF annually. From that, we estimate 13% loss directly attributable to the Hesperia Old Town waterline infrastructure. That equates to 193 AF per year. With a replacement cost of $320.00 per AF, the yearly replacement cost is $61,760.

The quantitative benefit of replacement of the Hesperia Old Town waterlines is cost savings of that replacement as well as reduced repair and maintenance costs. Since we typically calculate life cycles of 30 years for infrastructures, the total, direct cost savings from our proposed Project is $2,320,800. Figure D-2 illustrates.

Figure D-2 Life-Cycle Cost Savings

Total AF Consumption	9.3% Total Loss	13% Loss in Project Area	Replacement @ Cost ($320 per AF)	30-Year Replacement Cost Savings	30-Year Manpower Cost Savings	Total 30-year Cost Savings
16,000	1,488	193	$61,760	$1,852,800	$468,000	$2,320,800

HWD is the direct recipient of the cost savings.

The expected benefit toward CALFED goals is lessened dependence by HWD of imported water from the Bay Delta of 193 AF per year.

b. Qualitative Benefits. The qualitative benefits to Old Town Hesperia are increased fire protection, and increased environmental quality, which will also benefit the surrounding area.

4. Assessment of Costs and Benefits.

a. Major Assumptions and Methodologies. Our cost assumptions are based on experience with the replacement of 14.4 miles of the same 4" waterlines as those proposed in this Project. We have estimated the replacement cost of the 55,350 LF of waterlines on actual bids at $32.00 per LF. As illustrated in Figure D-1, with the exception of consulting fees @$200.00 per hour, our labor estimates are based on an average of $80.00 per hour, including overhead.

Our methodology for quantitative benefits is depicted in Figure D-2.

b. Benefits and Costs in 2001 Dollars. Direct cost and benefits, illustrated in Figures B-1 and D-2, respectively, are based on 2001 dollars.

c. Value Equivalent Conversion. Figure D-3 shows total cost and benefit using a value equivalent conversion of 6%. The Project will be completed in 14 months; hence the 6% reduction may not apply.

Figure D-3 Cost and Benefit Value

Calculation	Total Cost	Total Benefit
2001 Dollars	$2,214,000	$2,320,800
Value Equivalent	$2,081,160	$2,181,552

d. Cost and Benefits for Project Beneficiaries.

Figure D-4 Participant Cost and Benefit

Beneficiary	Cost	Benefit
City of Hesperia/HWD (Applicant)	$2,081,160	$2,181,552

Other Project participants who will indirectly benefit include MWA. DWR's benefit is the avoidance of 193 AF of replacement water that we require from the Bay Delta. That benefit is consistent with CALFED objectives.

e. Local Cost-Effectiveness. As illustrated in Figures D-3 and D-4, the Old Town Hesperia Waterline Replacement Project meets the requirements of local effectiveness (benefits are 1.05% greater than cost).

Appendix A
Supporting Documentation